# approach

AUGUST 1980 THE NAVAL AVIATION SAFETY REVIEW

# A Real Tragedy

THERE have been many instances in naval aviation where negative peer pressure has entered into the cause of an aircraft accident. Some have been well documented, others alleged or inferred. In any case, this contributing factor is usually discovered after the fact. Peer pressure has again taken its toll, and something must be done to ensure that this peculiar behavioral trait is apparent to those in authority in time to prevent similar situations from arising in the future.

A glaring example of the deadliness of peer pressure and lack of communications occurred recently in one of our communities. A tragic aircraft accident occurred that resulted primarily from pilot error. However, the followup inquiry discovered a more basic and underlying problem within the squadron as a whole, a problem that could be lurking around the corner in other communities as well. It is the type of unit problem that is easily recognizable in retrospect, but one that is very difficult to diagnose. Moreover, it is a problem that all aviation squadrons share to a greater or lesser extent, and although not the ultimate cause of an accident, it certainly can lead up to one if not dealt with in its early stages.

In this particular instance, a young but experienced aviator had been exhibiting behavior symptomatic of unsafe, unsound flying practices for some time prior to his fatal accident. These practices ranged from joyriding and flathatting to taking needless and uncalled for chances with his passengers, crew, and aircraft. The pilot admittedly was a talented, intelligent, and practiced technician, not only in the air, but in his administrative duties as well. This trait was established well before his involvement in aviation – an inbred desire to excel and be accepted by his peers as "the best." However, he had developed a state of mind and attitude inconsistent with professional naval aviation and its goals in safety. These attitudes and tendencies were known to his peers, who were not surprised about the accident after it happened.

This accident was truly preventable. Had there been a working squadron communications structure – *both vertical and lateral* – the command would certainly have been aware of his dangerous tendencies – past, present, and future. The command would have been able to educate, counsel, and provide guidance to this individual in hopes that it would channel his thoughts and actions in a more positive and professional manner. In short, here was an aviator who was not *in tune* with the safety program at all! This fact was *known* and *accepted* by his circle of friends, who did nothing to prevent the tragedy. This same scenario has been played out for years in naval aviation. This accident is simply the most recent example.

In the business of naval aviation, we must be our brother's keeper. Each and every aircrewmember must share in this responsibility. If anyone knows or suspects someone is mentally detaching himself from unit identity to the extent that safety is in jeopardy, you are not doing anyone a favor by closing your eyes to the problem. So, stop and assess your own situation as well as that of the people around you. Don't let the next accident be one which you could have prevented. ◄

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"Turn
on the
lights."

This photograph, taken aboard USS KENNEDY, illustrates the relative intensity of the new sodium vapor deck lighting aft of the island.

By Carter B. Weisiger
APPROACH Staff

DURING World War II, Admiral Marc Mitscher made the adjacent title famous when he directed the Fleet task force to *light up* to help a returning strike get back safely. Most of the aircraft were about out of fuel.

Carrier lighting has been improved since then, but lighting of all kinds has reached a new peak with successful experiments aboard USS EISENHOWER, USS NIMITZ, and USS KENNEDY. The results of these experiments mean that new and much better lighting will soon be incorporated in all carriers.

An article in the Spring '80 issue of FATHOM Magazine, "Carrier Lighting Changes," told of the changes and improvements made to the exterior lighting of carriers. For the first time, carriers will be better able to comply with '72 COLREGS (International Regulations for Preventing Collisions at Sea). Rule 20 of COLREGS states: "The Rules concerning lights shall be complied with from sunset to sunrise, and during such times no other lights shall be exhibited, except such lights as cannot be mistaken for the lights specified in these Rules or do not impair their visibility or distinctive character . . ."

Improvements in carrier exterior lighting will enable other mariners to identify the carrier as a single ship and determine the CV course without being confused by extraneous lights. Only those who have stood watches on smaller ships operating with carriers will realize how much easier it is with the new lights to determine the carrier's target angle and direction.

Shortly after the KENNEDY/BELKNAP collision, in which the lighting configuration of the KENNEDY was possibly a contributing factor, much interest arose in carrier exterior lighting. The Chief of Naval Operations directed the Chief of Naval Material to undertake a program to improve the lights on carriers. NAVSEC and NAEC, in response to tasking, began independent studies to correct the situation.

A joint action group was formed last year to provide new impetus for seeking a solution to the problem of carrier collisions. The group met in April '79 to define the problem and to determine what could be done to readily identify the carrier's target angle for other shipping. At the time there was no such thing as standardization for carrier lighting. Technical and scientific advice was sought from various commercial and Navy lighting research groups.

Continued

What effect do the multiple lights have on a viewer? – confusion. A watchstander simply does not know which of the multiple lights he sees is a navigation light. Multiple lights create masking in which the brighter light reduces the apparent intensity of all other lights. Multiple lights contribute to *scatter*, a phenomenon where a lighted area is enveloped in a halo of light which has been refracted and reflected by particles in the air. Another problem of multiple lights is *glare.*

One of the main problem areas of present carrier lighting is a proliferation of external red lighting. Red light is the least damaging to night vision, but it's one of the least efficient lights under which to work. There was so much red lighting aboard, with all its drawbacks, that red lighting was a major confusion factor in the external appearance of carriers. To correct this, low-pressure, amber, sodium vapor lights were tried successfully aboard USS EISENHOWER and blue deck edge lights were tried successfully on USS NIMITZ. The latter have resulted in a service change for all carriers. Further, USS KENNEDY has been tasked to develop a sample lighting bill which will take into consideration the many different lighting conditions aboard carriers.



Before the recent experiments, carrier night lighting installations were in conflict with '72 COLREGS, and the use of red, general purpose lights could be mistaken for the portside light. Surveys were conducted to correct this serious defect.

Included in the survey aboard USS EISENHOWER and USS KENNEDY, special alterations were made. These alterations included:

- Repositioning the forward masthead light atop a spar outboard and abeam of the No. 1 catapult.
- Relocating the side lights aft of the port and starboard angles, nearer the widest part of the ship.
- Changing the lens of the running lights to fresnel lenses.
- Installing blue vice red deck edge and elevator safety lights.
- Installing low-pressure, sodium vapor floodlights for the flight deck, island perimeter, and various work stations.

The new forward masthead light at frame 50 and the new dual lens side lights, outboard of the flight deck extremities (all with fresnel lenses), have enhanced the visibility and recognition of the carrier under darkened flight deck conditions and during flight operations. The result of these changes was a vast improvement in the ease of acquiring the carrier's target angle, as well as a great improvement in flight deck floodlighting for personnel and aircraft handling safety.

(Left to right) The forward, angle, and waist banks of the new sodium vapor lights are shown illuminated.

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Members of the lighting survey team representing CNO, NAVAIR, NAVSEA, NAEC, NAVAIRLANT, IERI, and FLTAVCOM went to sea for trials. USS PETERSON served as an external platform. Eight-point photo coverage of the carrier with the new lighting was obtained. Observers aboard PETERSON advised that positive recognition of the carrier aspect was immediate. Port and starboard aspects and points forward and abaft the beam were easily identified.

Some difficulty was encountered in the head-on aspect due to a partial masking effect on the after masthead light from the forward bank of sodium vapor floodlights, but there was still marked improvement in recognition of masthead lights with the background of sodium vapor lights compared to the present background of white incandescent floodlights. Visibility of the masthead light was greatly improved when only one sodium vapor floodlight was on in the forward bank. With only one lamp illuminated (the preferred condition), the color distinction between the white masthead light and the amber sodium vapor light was easily seen. The use of binoculars left no doubt at all. The slight masking effect can be easily remedied by a downward shielding of the sodium vapor floodlights.

The erection of the new spar does not interfere with launching aircraft from the No. 1 catapult. However, one deck spot at the starboard angle must be sacrificed for the new mast. There is comparable room on CV-66 and CVN-68, but CV-59/60/62 have less clearance. On the latter three carriers, actual hookup to the shuttle would be forward of the spar, and clearance during lineup of an E-2/C-2 would be about 2 feet. Position of the spar on the latter three carriers


The waist and aft banks of the sodium vapor lights are shown here aboard the USS KENNEDY.

will not provide 100-meter separation between masthead lights, but will be a great improvement over the present installation.

During the experiment on USS KENNEDY, port and starboard side lights were visible from a position 2 miles dead ahead. However, they were not both visible throughout the arc normally seen on other ships. When the masthead lights were in line, only the starboard running light was visible. A slight clockwise rotation of the port light could correct this discrepancy by creating a visual display for the carrier similar to that found on other ships. The fresnel lenses on the side lights enable them to be seen beyond 5 miles.

Determination of the carrier's direction was improved during the lighting survey. Reduced red lighting, relocation of the side lights, and use of brighter fresnel lenses all contributed greatly, but the erection of the new spar masthead light by NAVSEA was the single most significant improvement in USS KENNEDY's display. The carrier looked like a ship – even during flight operations.

The failure to eliminate masking on the forward masthead light because of the use of amber sodium vapor lights doesn't present a big problem. The forward light bank can be repositioned or shielded. The new light changes are superior to any previous carrier lighting configurations, provide quick and easy knowledge of the target angle, and bring carrier lighting into compliance with the COLREG requirements.



Preflights, deck handling, stores loading, and aircraft servicing are infinitely easier and safer with the sodium vapor lights. They have been located along the 010/011 level of the island in sets of three lights per bank, and in four separate bank positions. The positions are such that lighting is plentiful for the forward, angle, waist, and aft areas of the flight deck. Each bank includes standard, commercial 90/135/180-watt lights, capable of being energized separately. Island perimeter lights were also installed. These lights are 35 watts, and include three lights illuminating the bomb farm area and two other lights along the port side of the island. All lights are presently unshielded, but shielding in the future is intended. The preferred combination of the sodium vapor lights was a single 180-watt lamp fore and aft, and one 135-watt lamp each for the waist and the angle. These lights provide a uniform source of lighting across the deck and leave no black holes (commonplace with the old red/white floodlights). With all three lamps in each bank on, there was too much light – although for any kind of deck emergency, all lamps in the bank would be useful.

There is a warmup time required for the lamps to reach full intensity. No unusual problems have been encountered, however. Warmup times vary from 6 minutes for the 90-watt lamp to 11 minutes for the 180-watt lamp. A shutter assembly is being considered to provide instantaneous lighting. The lights have greatly improved the visibility of prop and rotor arcs, intakes, and equipment with reflective tape. Another excellent feature is that the sodium vapor lights do not noticeably affect night vision, even after looking directly into the floodlights.

Flight operations, fire drills, aircraft hookups, and barrier rigs are easily accomplished under the new lighting source. The new sodium vapor floodlights are also cost effective; they cost $3600 for the entire four banks, while the cost of one white floodlight is $4000. Current incandescent flight deck illumination uses as many as fifty 300-watt red and thirty 500/1000-watt white floodlights, compared to the 12 sodium vapor lights (only four of which are used at any time under normal conditions). The energy savings with the sodium vapor lights are tremendous.

One drawback of the sodium vapor lights is the problem of shirt color determination of flight deck personnel. Red, green, brown, and purple appear grayish brown. White and yellow are similar, but of a definitely lighter shade. Another problem arose during signal light use, due to the amber color and similar hue of the sodium vapor lights, but a blue filter on the signal light eliminated the problem.

The 35-watt sodium vapor lights used around the perimeter of the island eliminated any dark spots. They prove far better than incandescent lights in all ways. Two of the three lights in the bomb farm are sufficient, and they are taped to prevent excess light spillage to the starboard side.

Other selected work stations were evaluated also. Two 35-watt lights were set up in the forward UNREP station, two 55-watt lights were used to illuminate the jet engine test cell area, and one 90-watt light was used in the lowered position of the No. 2 elevator. Significant improvement was noted in all areas, and the UNREP station lighting was not offensive to the alongside AO.

Conversations with RADM R. F. Dunn, COMCARGRU-8, and members of his staff, as well as key personnel aboard USS J. F. KENNEDY (Pri-Fly, Flight Deck, Aircraft Handling, and Catapult) indicated that the flight deck, low-pressure, sodium vapor lights have made night deck operations much safer. Comments on the lighting were unanimously favorable.

The CO of USS KENNEDY made the following points in a message regarding the new lighting:

- The sodium vapor flight deck lighting represents an improvement over the conventional lighting configuration. There is increased depth perception relative to the deck edge, with no degradation in night vision or visibility to the horizon.
- The sodium vapor lighting hampered efforts to signal by flashing light. Receiving stations were unable to read

JFK signals due to the intensity of the lights and their location relative to the flashing signal lights. Relief was obtained using red/blue filters. Proper shielding should alleviate this problem.

- The sodium vapor lights represent a significant improvement for flight deck personnel. Clear definition of equipment, aircraft, and deck personnel was available from bow to stern when viewed from Pri-Fly. Also, the uniform light pattern eliminates dark/bright spots, which enhances depth perception and equipment recognition for deck crews. Visual transition looking up and down the ship poses no problem, and loss of night vision has been eliminated, even when looking directly into the lights. All deck gear (chocks, chains, GSE) are visible and easily identified. Deck crews are able to move easily about the flight deck since they can see all equipment, foul lines, and aircraft extremities. The catapult officer can easily see the catapult hookup area and can better see aircraft configurations.
- The LSO commented that the landing area is well defined and the ramp area is distinguishable with little or no horizon.

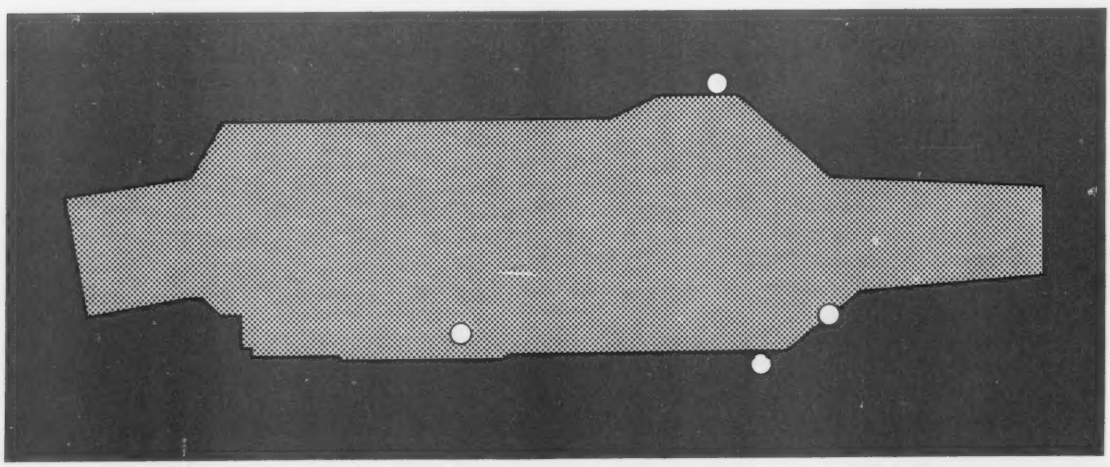
Pilots of embarked squadrons are equally happy with the improvement in night lighting. One pilot commented, "For the first time in my career, after I raise the hook and start to taxi, I can take my feet off the brakes. When I taxi up to the bow, instead of being scared to death and in a cold sweat, I'm still plenty concerned, but not quite as damp." A squadron LSO said, "With the sodium vapor lights, I can watch a pilot land and know which wire he's picked up. If I have the time, I can actually see him raise the hook and taxi forward." A veteran pilot's only comment was that the new night lighting is *sierra hotel.*

Many pilots commented that coming aboard at night, even though concentrating on lineup, AOA, and airspeed, they are aware of the lighted deck, and if they had to bolter, they liked a brief look at the deck as they passed.

Plans have been made to expedite the lighting changes for all carriers in the next 2 years, during complex overhauls, routine overhauls, selected restricted availability periods, and service life extension programs. USS LEXINGTON, AVT-16, will not have the new spar mast installed due to the lack of available deck. All carriers will have the new sodium vapor flight deck floodlights installed. All will have the sodium vapor work station lights installed for the UNREP stations, lowered elevators, jet engine test cell, and garbage sponson. All external red, standing light globes and red catwalk light globes will be replaced with white globes. No requirement exists for red globes on weather decks or catwalks in Navy ships.

While the many improvements aboard USS KENNEDY will do much to eliminate carrier night lighting problems, strict discipline must be maintained on all externally visible lights to enhance night recognition and reduce possible misinterpretation of ship identification and movement. ◄

*APPROACH would like to express appreciation to CDR Robert Burns, CARGRU-8 Material Officer, for his invaluable assistance in the preparation of this article. –Ed.*



This illustration shows the new location of carrier running lights. The forward masthead light is mounted atop a spar for easier identification.

Training Command Carrier Qualifications
or

# Back to basics for everyone

By LT Barry Love
TRAWING 3 LSO

I SUSPECT the mere title of this article (with the visions of funny little orange and white airplanes) dissuaded a certain percentage of *sierra hotel* Fleet types to continue on to more exciting prospects. But, after serving as an LSO at one of our jet training bases for over a year now, and reminiscing about Fleet ops, I've observed a lot of similarities in pilots' habit patterns that are applicable to *all* carrier aviators, nugget to CAG. I challenge each reader to mull over the following characteristics frequently observed in the carrier landing pattern, and try them on to see if they fit you:

- The too close abeam/too wide abeam/just not set up start. Remember how peculiar you thought it was that your first LSO *must* have had eyes not only in the back of his head, but near his ears as well. How could he be watching the *Buckeye* on the ball and still be critiquing your abeam set ups? Well, by golly, we eventually learned that being all set up (checklist complete, trimmed up for hands off, on speed, just the right distance for the correct groove length, etc.) made life with Paddles just a bit easier. Or did we learn? How was your last abeam position and groove length?
- Our second aviator is the inconsistent start fellow – sometimes high, usually low, seldom rolls wings level, on speed, with a centered ball (dare I even suggest lineup squared away too?). Have you ever been confronted by your squadron or CAG LSO with words to the effect, "Jacque, your starts are killing you"? Now, what was it those silly programmed texts used to say about maintaining an instrument scan (including radar altimeter) through the 90 to give you a centered ball as you rolled wings level, *every time*? Hmmm!
- The third individual for discussion is usually an outgrowth of one or both of our first two *cowboys*. He's a member of the high (or low) all-the-way gang. "I just can't seem to get those starts under control, so why bother to put the ball back in the center? After all, I'm already down to a fair pass [ever heard of a nice-correction comment?], so let's drive it in this way and not upset the status-quo." Only problem is that North American, Grumman, Vought, and Lockheed (for the die-hard *Phantom Phylers*, I'll mention McDonnell-Douglas, too) didn't build your trusty steeds to consistently take those 1500 fpm smashes into the flight deck and then be "up" for the next launch (next cruise?). The dude in the low all-the-way gang is guaranteed two additional things besides death and taxes: his no-grade is going to pull down both his and the squadron's average, and, if the low orange ball turns to a flashing red one, there will be another 16 flashing lights to accompany that one! (If confused, next time you jog by the lens, count the total number of waveoff lights on it.)
- The final candidate is Lieutenant (senior/middle/junior grade) Ruff, who flies the ball as if it were a PMFC on the lens; he's checking out each cell throughout his pass to ensure they all function. No doubt, he's also checking his indexers for proper indications, too, and only sees the amber doughnut as he's passing through it. Besides, he keeps those plat LSOs in the readyroom on the edge of their briefing chairs, and lowers the duty LSO's life expectancy down to an acceptable 43 years, due to chronic heart and nerve disorders.

Well, have you found yourself among these aeronauts of the seas? I suspect we all have been there, perhaps still are, in one instance or another. The irony of it is that these instances were drawn from incidents involving the Training Command (your attention is invited back to the title). Have you personally graduated from those days, or do you need to brush up on the basics?

See you on the ball!

# ERRANT PROP

LT Dan Mazzeo, LCDR Joe Galler, and AE2 Mark Betcher of VRC-40 were flying their C-1A on a logistics run from USS SARATOGA. Passenger drops were made at NS Mayport and Jacksonville International. The weather was 500 feet overcast and solid to well above the COD's unpressurized cabin altitude of 10,000 feet when it departed Jacksonville International en route to NAS Jacksonville.

The entire aircraft began vibrating excessively after climbout from Jacksonville International to 3000 feet, as power was reduced from 35 to 27 inches. LT Mazzeo's rapid visual inspection of the port engine followed by LCDR Galler's visual inspection of the cockpit confirmed the need to secure the port engine. While LT Mazzeo, the pilot in control, maintained the aircraft in balanced, level flight, he called upon LCDR Galler, pilot in command, to assist him in securing the port engine.

Using the emergency shutdown checklist, the mixture control lever was pulled to idle cutoff on the port engine, and the port feather button was depressed. Two prop blades feathered while one did not. The prop continued to windmill at approximately 300-500 RPM, causing severe vibrations to continue. The port prop finally slowed and stopped after turning approximately 1½ minutes.

The aircraft was in solid IMC and under radar control at the time the emergency was declared requesting vectors to a short GCA to NAS Jacksonville (200-foot overcast, vis – one-half mile). AE2 Betcher, aware of the situation, quickly checked the cabin to ensure that his passengers were properly strapped in and rebriefed them of the procedure to follow should a forced landing be necessary.

The drag caused by the partially feathered prop made maneuvering extremely difficult. The C-1A commenced a precision approach and the pilot obtained contact with the runway environment as they approached minimums. LT Mazzeo then visually flew the aircraft to an uneventful landing.


The pilots stopped the aircraft in 4000 feet, using differential rudder and braking to maintain runway alignment. The starboard engine was secured and the aircraft was towed to the transient line.

Inspection revealed that two of the C-1A's port prop blades had feathered while the third remained in low pitch. Further maintenance inspection revealed that the third prop blade had broken away from the gears internally, within the prop dome, and had jammed in the low pitch (high RPM) configuration. The port prop was changed and the engine inspected. The subsequent postmaintenance checkflight was satisfactory, and the aircraft was returned to flight status.

LT Mazzeo displayed outstanding airmanship in recovering his C-1A from a critical situation. He was ably assisted by his copilot, LCDR Galler, who coordinated with the pilot on trouble-shooting procedures and utilization of appropriate emergency procedures and assisted the pilot in taking the correct action. AE2 Betcher, aware of the emergency in progress, rebriefed his passengers and was instrumental in keeping them calm. It was a totally professional job that saved the COD, the crew, and their invaluable load of passengers. Attaboys!

# BLUE WATER

IT was 0640 and I was sitting in the readyroom having my fighter RIO's breakfast – a cup of coffee. The 0430 to 0630 Alert 5 had been a bore. Just another in a series of watching the sun rise. The air intelligence brief and subsequent squadron brief that morning were (yawn) standard. I drifted off into a daydream, thinking about getting back in port and, eventually, that long awaited PCS move back to the States. Suddenly, the brief was over. I had just enough time to suck down a cup of coffee to stay alert on the flight. Little did I realize I was up to my neck in trouble already.

Preflight, man-up, and start were normal. So far, so good. While taxiing to the catapult, I switched the TACAN to T/R. Darn, the ship went EMCON again. Oh well, never mind. Got the PIM update, and the aircraft maintenance book said this is a good NAV computer. Up on the catapult, in tension, everything checks good. The pilot salutes and away we go. Gear up, flaps up, out of burner, and everything's okay. Time to turn on the radar; oops, better turn on the NAV computer. It will be a little off, but I can update it when we turn off the departure radial.

Visibility is fair today, with the sand dust limiting visibility to around 5 miles. Everything settles into place; the normal routine comes into play. Radar *bit* checks completed, I switch to operate.

Let's see, time to switch up to our controller, join up with our wingman, and get fuel. The check-in, joinup, and tanking are all pulled off without a hitch. Time to relax.

We take aircraft separation for a little air intercept work

# RIO

By LT William A. Clausen
VF-161

when the controller comes up, "Rock 112, you have mission change. Take vector 270 for unidentified contact." "Rock 112, roger, 270." Now let's see, where are we? Darn, the ship's TACAN is still off. What about the small boys' TACANs? No luck there either. Ahh, the NAV computer! Humm, 150 for 90 miles. I didn't think we were that far away. Let's get a check from our controller . . . "Roger, Rock 112, pigeons homeplate – 120 for 60 miles." That can't be right! This NAV computer is supposed to be good; I'll just go with it.

I'm now over my head in trouble. Just a short time later (or was it?), it's time to head on home. A pigeons request gets me, "Roger Rock, you're in the dark. Estimate pigeons 100 for 90." A crosscheck with the NAV computer gives me 160 for 100 miles. Let's see, distance is about the same and the controller has us in the dark; I'll go with the NAV computer.

Turning to 160 degrees, I thank the controller for the excellent control (can't seem to remember him talking to us!) and switch to ship's strike. "Rock 112, Strike, report 50 miles, negative contact." As the max conserve drive toward homeplate continues, I see that we will have no fuel to spare. "Rock 112, Strike, call your posit." "Strike, Rock 112, estimating 340 for 40 miles." "Rock 112, Strike, are you sweet father?" Sweet father? The TACAN is off. Better check it. Oh, WOW! "Roger, Strike. Rock 112 is sweet father." Now, how did we get on the 240 radial and at 40 miles? How did we get so far off course with no gas to spare? A few answers follow:

- Lack of attention at the briefs. It was briefed that there could be a station change, and that the ship would be EMCON for our launch.
- Tired and hungry. Lack of sleep and improper nourishment resulted in poor headwork before and during the entire hop.
- NAV Computer. I believed it was good (it was!), but I didn't turn it on until 15 miles ahead of the ship, didn't update it when I had a visual on the ship, and didn't even enter the winds from the brief.
- No DR Plot. I knew during launch that the TACAN was off. I should have kept a DR Plot in case everything went to worms (like it did).
- Didn't believe the controller's calls. The old "I'm right and he's wrong" syndrome bites again. A fighter RIO is almost never wrong! (Right?)

This fictitious flight could have been worse! What if the ship had remained EMCON? With 75 straight days of blue water operations under my belt, and a hop scheduled, I think I'll return to the basics of navigation.

## Hot Engine – Cool Crew

LIEUTENANT Bill Watson and his RIO, LTJG Jeff Kuhnreich, of VF-103 launched on a day CAP mission in their F-4J *Phantom* from USS SARATOGA (CV 60). Off the catapult, they found that the port throttle was stuck at military power. Notifying the ship of the problem, they climbed to an overhead rendezvous with the tanker. En route, the crew proceeded with NATOPS procedures for a stuck throttle and thoroughly examined the throttle quadrant for FOD. None was found.

Precision inflight refueling was accomplished with the intention to hold and make a single-engine carrier landing at the scheduled recovery time. When the gear was lowered for landing, the aircraft experienced a utility hydraulic failure, with the nose and starboard main gear barberpoled. Quickly checking the pneumatic pressure, LT Watson saw that it had also started to drop. LTJG Kuhnreich informed the ship of their compounding problems and a "signal bingo" was received.

Landing gear were pneumatically extended before pressure dropped below limits, and the profile for a 126-mile, gear-down/flaps-up bingo was flown to NS Roosevelt Roads. The crew elected not to secure the left engine until after field arrestment to retain hydraulic pressure on both sets of flight controls and avert a possible uncontrolled flight situation at landing airspeed. The flaps were lowered pneumatically without incident.

At the field, LT Watson maneuvered his aircraft to obtain the lowest approach speed possible. With 195 knots indicated, he made a roll-in landing to a shortfield arrestment. The engine with the stuck throttle was secured upon engagement using the engine master switch.

That a potential accident was averted and that this airplane is flying again was entirely due to the cool, professional handling of multiple emergencies by a skilled aircrew. A well deserved attaboy for LT Bill Watson and LTJG Jeff Kuhnreich.

# "But I thought..."




IN the JUN '80 issue of APPROACH, we told you about some pretty complicated vertigo manifestations. We laid off for a month, to allow your psyche to recuperate. As before, we strongly suggest that you get the MAR '80 thru JUN '80 issues of APPROACH, in which we talked about all the most common forms of vertigo related to flight. This month, we begin the disorientation phase of our series.

We will tell you all about *target fascination* or *fixation, breakoff phenomenon,* and the *autokinetic phenomenon* or *visual autokinesis.*

Many of the various forms of disorientation simply are due to a lack of attention on the aviator's part. Never happen to you? Don't be so sure! Think back. Whenever we fail to make 100 percent utilization of the inputs in our surroundings, we are subject to this phenomenon.

**FIXATION**: Either boredom or too much attention to a single detail or an aircraft malfunction can bring us face to face with this problem! There is a constriction or narrowing of our field of attention, and we fail to perceive significant and relevant information. (Remember when we were talking about vertigo, the problem was a *misperception.*) When we talk about *fixation* or *fascination,* we simply mean that we fail to respond adequately to a situation, even though we are given all the necessary inputs and know perfectly well what our response should be.

Did it ever happen to you? You betcha! You probably just wrote it off as daydreaming, or perhaps complained that there were just too many things to do at once, or perhaps that the task at hand was too exacting and you had to really concentrate on it. Perhaps it was a certain instrument you were concentrating on, or your aircraft had a malfunction that drew all of your attention to the detriment of all else. This is not always visual. For example: Consider an aircraft coming in for a landing. The pilot is 50 feet too low. The NFO warns the pilot, even screams at him – no response. The aircraft lands short. Similar fixation occurs occasionally on carrier landing approaches. We admit that the most common culprit is the student aviator. He is usually stressed, and he

By CDR V. M. Voge, MC
Naval Safety Center

frequently allows his attention to fixate on one instrument, point in space, maneuver, etc. to the exclusion of all else. You more experienced pros have developed a regular scan so that you constantly and consistently know all aspects of your aircraft's performance and behavior. Right? Of course! Except as mentioned above, when you are bored, or when your workload becomes too great, or when you're anxious. You actually become less efficient. Your coping mechanisms fail, and your performance slides. You concentrate on only a few instruments, like airspeed, and forget to check altitude. The low altitude horn comes on loud and clear, but you don't hear it. You're too engrossed in the job at hand. As you might expect, this happens most frequently during instrument flight, but not always.

**TARGET FASCINATION**: An aviator may become so engrossed on hitting the target, during a bombing run or a rocket attack on a ground target, that he completely forgets to pull up until very late, if he wakes up at all! Ridiculous? Wrong! This was a suspected causal factor in more than a few major mishaps that we reviewed here at the Safety Center last year. It is felt that such things as fatigue, hypoxia, hangover, medication/drugs, and personality factors may contribute to the problem. This phenomenon is difficult to prevent, although keeping oneself physically fit and *on guard* may help. When you do feel as if you're suffering from this problem and you're in a fixed-wing aircraft, first check your oxygen equipment, just to make sure you're not hypoxic, then take it from there.

**BREAKOFF PHENOMENON**: The *breakoff phenomenon* usually occurs only at rather high altitudes (30,000 feet or higher). It is often described as a weird feeling of detachment, isolation, remoteness, and separation from the earth and from the aircraft. One feels as if he has broken the physical bonds of earth, or as if he is being balanced on a knife edge. Occasionally, the aviator may feel that he is outside his own aircraft and body, watching himself fly the aircraft. This manifestation plagues the experienced aviator during long, solitary, routine missions with a constant heading. A poor horizon and lack of visual cues of external motion facilitate this illusion. The dark blue sky frequently merges with a uniform cloud cover. This illusion is not the exclusive domain of you high-altitude jet jocks, however. Helo drivers have described very similar sensations while flying as low as 500 feet over an uninteresting seascape, in hazy conditions.

The *breakoff phenomenon* is a rather frequent illusion. About a third of you subjected to these conditions will admit to experiencing it. Most of you describe the feeling as pleasurable, and part of the joy of flying. About a third of you, however, do not appreciate it. You complain that it makes you nervous and is disturbing. Your performance may be adversely affected by your anxiety state. You may have an increased awareness of any change in aircraft attitude or motion. A 5-degree bank may feel like 30 degrees, or you may feel as if you're rolling or banking when you are actually straight and level. You may feel as if you have no visible means of support – that you will literally fall out of the sky.

The sensations involved in this phenomenon are usually very short-lived, and you will rapidly return to reality when you descend, change altitude/attitude, or when your attention is directed to some task at hand, i.e., heading change, comm, cockpit checks, etc. Infrequently, an aviator will require some sort of ground or cloud reference, something that will give relative motion cues, in order to bring himself back to reality.

**AUTOKINETIC PHENOMENON**: The fourth illusion is the *autokinetic phenomenon,* or *visual autokinesis.* Remember way back when you were in the training command and you were put into a pitch black room – all the lights were put out, except for a lone pinpoint light. You were told to watch the light move, and try to remember its path. Of course, we all were surprised to find, after about 15 minutes of watching the light go up and down and all around (wandering rather aimlessly), that the light was fixed. The movement was imagined, all in our head (or eyes in this case). The illusion appears to be due to the changing tension in our neck muscles and/or a certain degree of fatigue in our eye muscles. The featureless background does not give us enough information about the involuntary eye movements that we are experiencing to be able to compensate. We interpret these movements as movements of the light. This phenomenon is one of the reasons ultraviolet instrument lighting was abandoned in cockpits. The glowing phosphorus against the background of a black cockpit or instrument panel provided the necessary conditions for this illusion. When are we subject to this illusion in the real world? It is most frequent during night formation flying, especially so when only one running light can be seen on the lead aircraft. You may have difficulty distinguishing between the real and apparent movements of the leader. How do we fix this one? There's no good way. The addition of more, bigger, and brighter lights to the background will help, but this isn't always operationally feasible.

As you can see, the *fix* for disorientation phenomena is not as cut and dried as with vertigo. About the only thing we can recommend here is to keep physically fit and alert, keep changing your points of reference, and don't fixate.

Well, you had it pretty easy this month! Next month, we will try to finish up all the various forms of disorientation. We'll tell you about such things as *flicker vertigo,* the possible *misinterpretations of lights, circularvection* and *linearvection, approach and landing disorientation,* and so on. See you next month!

# Anymouse




## Tunnel Vision

UPON replacement of the stabilator power package, the F-4 *Phantom* was readied for a postmaintenance functional checkflight. All preflight flight control systems checks were normal, until it was discovered that the control stick would not release from the full aft position with the hook lowered. Maintenance troubleshooting revealed that the control cables running through the stab pack area were wrapped together with safety wire!

This is a common practice in our unit, employed for easier access while working in this area. Uncommon, however, is the fact that no fewer than three collateral duty inspectors and two quality assurance reps had looked this job over before the panels were reinstalled. Embarrassing? Yes, but it should bring home a basic point to all of us involved in aircraft maintenance inspection. Inspection of any maintenance task requires and demands a close look at the surrounding area!

Lookingbettermouse

*The above Anymouse was prepared by the squadron's QA division at my request and is being sent with the commanding officer's knowledge and approval. This letter has neither.*

*Until a short time ago, I was the ASO of a Marine F-4 squadron. The above-mentioned incident meets OPNAVINST 3750.6L criteria for being reported as an aircraft incident. The squadron CO, however, would not allow me to release an aircraft incident report on this occurrence. Apparently, he finds incidents caused by maintenance personnel within his squadron too embarrassing to report.*

*Maintenance personnel state that safety wiring the control cables together for easier access in the stab pack area is a common practice, even though it is not in the MIMs. This practice has definite potential for loss of aircraft and lives. I feel very strongly that an aircraft incident report should have been submitted and a change to MIMs recommended to include inspection for cables safety wired in the stab pack area.*

*I tried to talk the CO into allowing me to submit an aircraft incident report, as did the QA officer and the assistant aircraft maintenance officer. When I questioned the CO on his reasons for not allowing the incident to be reported, he told me that the last time we submitted an incident report like this he was chewed out by the commanding general. When I asked*

The purpose of Anymouse (anonymous) Reports is to help prevent or overcome dangerous situations. They are submitted by Naval and Marine Corps aviation personnel who have had hazardous or unsafe aviation experiences. These reports need not be signed. Self-mailing forms for writing Anymouse Reports are available in readyrooms and line shacks. All reports are considered for appropriate action.

**REPORT AN INCIDENT**
**PREVENT AN ACCIDENT**

*specifically which incident he was referring to, he told me it was when a maintenanceman ran a tow tractor into the nose gear door of a squadron aircraft.*

*Although both are reportable incidents, I think there is a vast difference in the seriousness of safety wired flight control cables as compared to a GSE/aircraft crunch. Additionally, while on a WestPac deployment under a different commanding general, the squadron had at least three reportable incidents (all GSE/aircraft collisions) which the CO would not allow reported. Besides being in direct violation of existing directives, his actions set an extremely bad example and showed a decided lack of support for the aviation safety program.*

*Whether the fault lies with him personally or with the attitude of his seniors, as he claims, this is an unsatisfactory situation, and steps should be taken throughout the chain of command to change this attitude. To do an effective job, ASOs need the full support of their commanding officers, even if some incident reports are embarrassing. A commanding officer that stifles his ASO might as well not even assign anyone to the billet. Reporting this incident with the safety wired flight control cables could very likely save an F-4 and some lives. Purposely not reporting it borders on criminal negligence.*

*A Former ASO*
*and Concerned Naval Aviator*

**• The MIMs were not at fault here. The practice of wrapping control cables with safety wire is not a common practice in other F-4 squadrons questioned. However, what can happen in one squadron can always occur in another, and this incident should have definitely been reported. We hope all Wing/Group/Squadron Commanders get the message here!**

## Watch Your Priorities!

A POTENTIAL fire and loss of a P-3 aircraft was barely averted despite the urgency and tempo of increased operational commitments.

A rushed phase maintenance check was required by Operations to meet a tight deployment schedule. A normal maintenance check of an APU was hampered by the failure of the APU exhaust door actuator to open the exhaust door. This turned a routine APU check into an unusually difficult task. The unusual procedure led to a crush gasket being forgotten upon reinstallation. With the gasket missing, hot APU exhaust air was ported improperly around the exhaust door and severely overheated surrounding structural components. Meanwhile, the pressure was applied to: 1) solve an engine problem; and 2) make the flight launch. Fortunately, another problem involving air-conditioning allowed time and talent to be applied to the APU leak, solving the potentially dangerous launch of a sick bird. Whew!

Solution: Reassign our priorities. Don't succumb to the pressure of commitments. Apply more attention to detail in our individual jobs (the other guy ain't gonna do it!). Take about half of the cooks (decisionmakers) out of the kitchen and let the maintainers maintain. Finally, scheduling an aircraft before it's in an up status will burn you every time.

Relievedmouse

## Rank(ing) Plane Commander

A P-3 deployed at NAF Northern Japan was operating at NAF Central Japan as an augmentation aircraft and was scheduled for a flight to NAS Great Liberty, Philippines. The aircraft was at the hold-short position when an INS-FAIL light illuminated. A decision to return to the line and request assistance from the host VP squadron in repairing the faulty INS was made.

A lineman was dispatched to direct the visiting P-3 into a parking spot for maintenance action. The lineman, utilizing wands, proceeded to give the come-ahead signal to the transient aircraft into the parking spot designated by the maintenance chief. Upon seeing that the designated parking spot was evidently further from the hangar than he desired to walk, the PPC disregarded the taxi director's signals and elected to turn into a parking spot much closer to the hangar.

When his actions were questioned by the flight engineer, his response was,


"I'm a lieutenant and the lineman is enlisted, and I'll park where I want to." Well, in my opinion, so much for college educations. I wonder if this individual has ever seen the end result of a turning prop that hit something like a tow tractor or fire bottle, or the problems of digging an aircraft out of a freshly repaired ramp that has not cured yet? Have we in some cases lowered the standards for plane commander qualifications?

F/E Mouse

**• We haven't lowered our standards, but your unit has let at least one idiot slip by.** ◄

# When the NATOPS manual



FOR those of us who read the fine print of our NATOPS Manual entitled "FOREWORD," the following excerpt is undoubtedly familiar:

*"This manual contains information on all aircraft systems, performance data, and operating procedures required for safe and effective operations. However, it is not a substitute for sound judgment. Compound emergencies, available facilities, adverse weather, terrain, or considerations affecting the lives and property of others may require modification of the procedures contained herein."*

It leaves what is not discussed to the aircraft commander's best judgment when unusual situations arise. As long as his actions do not violate established procedures and he is lucky enough to come out without injury or damage to aircraft or property, he is unlikely to invite command attention. The same scenario is likely to persist involving matters that are left unaddressed in the NATOPS Manual, if the incident does not involve substantial damage to the aircraft or property, or injury to personnel.

As a result, the NATOPS Manual continues to leave certain areas unaddressed. One such area is the loss of hatches, doors, access panels, and windows on the H-3. The NATOPS Manual places a requirement on the aircraft commander to inspect during the preflight for their integrity and during the post-flight for their loss. It also cautions pilots that the upper personnel door hatch can be lost in flight, and that above 90 knots, the window of the cargo door is prone to depart rapidly should the door be opened in flight – such as when rigging for rescue operations.

Granted, incidents of this nature are not an everyday occurrence, but they do occur frequently enough that perhaps it is time that some attention be given to the problem in the Emergency Section of the manual. Recently, one such incident could have resulted in the loss of an aircraft and its crew. Fortunately, for all concerned, it did not. However, it still leaves the subject unaddressed, and it is time for the H-3 community to explore this subject and decide whether it is desirable to outline emergency procedures once the occurrence jeopardizes the aircraft integrity and the safety of its crew.

The following is an account of the loss of a No. 1 engine door in flight, and what the crew elected to do as events unfolded and contributed to a very short, but most eventful flight.

The squadron flight schedule called for a hot-seat crew switch in an SH-3D. The procedures for this evolution were complied with, and no unusual problems came to light to suggest that a flight incident would occur. The brief was completed, and during the 2-hour standby, the HAC mentioned that his two previous flights had resulted in early termination due to equipment failures and malfunctions. Accordingly, if one were superstitious, a similar situation might occur on this flight as well.

Approaching the aircraft on a well-lighted ramp area, the HAC noted there were no leaks or missing hatches, etc. The aircraft had been airborne for approximately 3 hours, and the departing HAC's brief indicated no discrepancies. The


By CDR David B. Frye
XO, HS-74

# I isn't enough

crew switch was accomplished, and the HAC called for taxi. He was cleared to the East-West taxiway for a westerly departure.

The HAC mulled over the clearance, and while a westerly departure would expedite departure from controlled airspace, it would also take him over a high tree line, a busy highway, and a heavily populated area.

The duty runway was 17, and the winds were light and variable from the Southwest, with a solid overcast. Since the crew was not in a hurry, the HAC requested a takeoff on Runway 17 and departure to the south. After a notable pause, the tower cleared him as requested. The HAC stated afterwards that the only reason he asked for Runway 17 was that the runway lights provided better reference for the night takeoff, and would also provide space for an abort should that become necessary. Once in position on the runway, the HAC turned on the flood lights and the taxi light. The copilot made the takeoff from the right seat.

The evolution was smooth and routine for about the first minute. Then, at approximately 80 knots and 300 feet, there was a very loud bang and a severe airframe shudder. The immediate response was for the crew to check engine instruments for any sign of a compressor stall. These were normal. The heavy airframe shudder suggested the aircraft had struck something in flight, but no control difficulties were experienced. The tower was informed of the problem and approved the request for a precautionary landing on Runway 8, which would avoid overflying the heavily populated areas.

Interrogation of the crew indicated all was normal in the cabin area, eliminating possibilities in this area. At this juncture, the HAC's peripheral vision picked up the open and badly damaged No. 1 engine door in the halo of the flood lights. The open door had extensive damage and represented a serious hazard to the tail rotor. A precautionary landing seemed imminent. This became selfevident once the aircraft was established in a right descending turn to Runway 8, because the door made a half-hearted attempt to close itself – only to slap back down to a fully-opened position with another thud, breaking whatever structural members remained intact.

The door commenced to peel aft and upward in the airstream until it was left hanging only by the trailing edge (probably the fire detection element). The HAC at this point declared an immediate emergency, and undoubtedly, the urgency in his voice conveyed a better message than the description of the problem, fuel load, and souls onboard. He decided to slow the aircraft to 60 knots and maintain this airspeed through 150 feet, setting up for a single-engine landing. This proved to be good headwork, for the next event to unfold was firewarning lights on the No. 1 engine, followed by another thud and airframe shudder as the door tore loose, striking the main rotor blades. Amidst a shower of fiberglass, chunks of metal, and half an engine door chasing the aircraft up the runway, the copilot executed a run-on landing, followed by an emergency shutdown of the aircraft. Aside from a thoroughly customized engine door, several dings in the main rotor blades, and 3 minutes of flight time (2 of which could be classified as stark terror), the flight ended without serious damage to the aircraft and no injury to personnel.



It can be said that this was indeed a lucky crew, in that the rotary wing system did not sustain damage to the point of failure. Perhaps it is time to set forth emergency procedures to cope with incidents of this nature. Perhaps the action taken by this crew was incorrect, and there was a better way to handle the situation.

Hopefully, this article will simulate some thought on the subject and lead to addressal of the subject in the NATOPS Manual before we lose an aircraft and crew. For years we were content to "wing it" on coupler emergencies until the loss of enough aircraft and crews got the problem areas addressed in detail. The time is right to do this on the loss of doors and hatches.

*Other helo communities have experienced similar occurrences. In particular, the H-2 NATOPS contains recommended procedures to deal with these incidents. –Ed.*

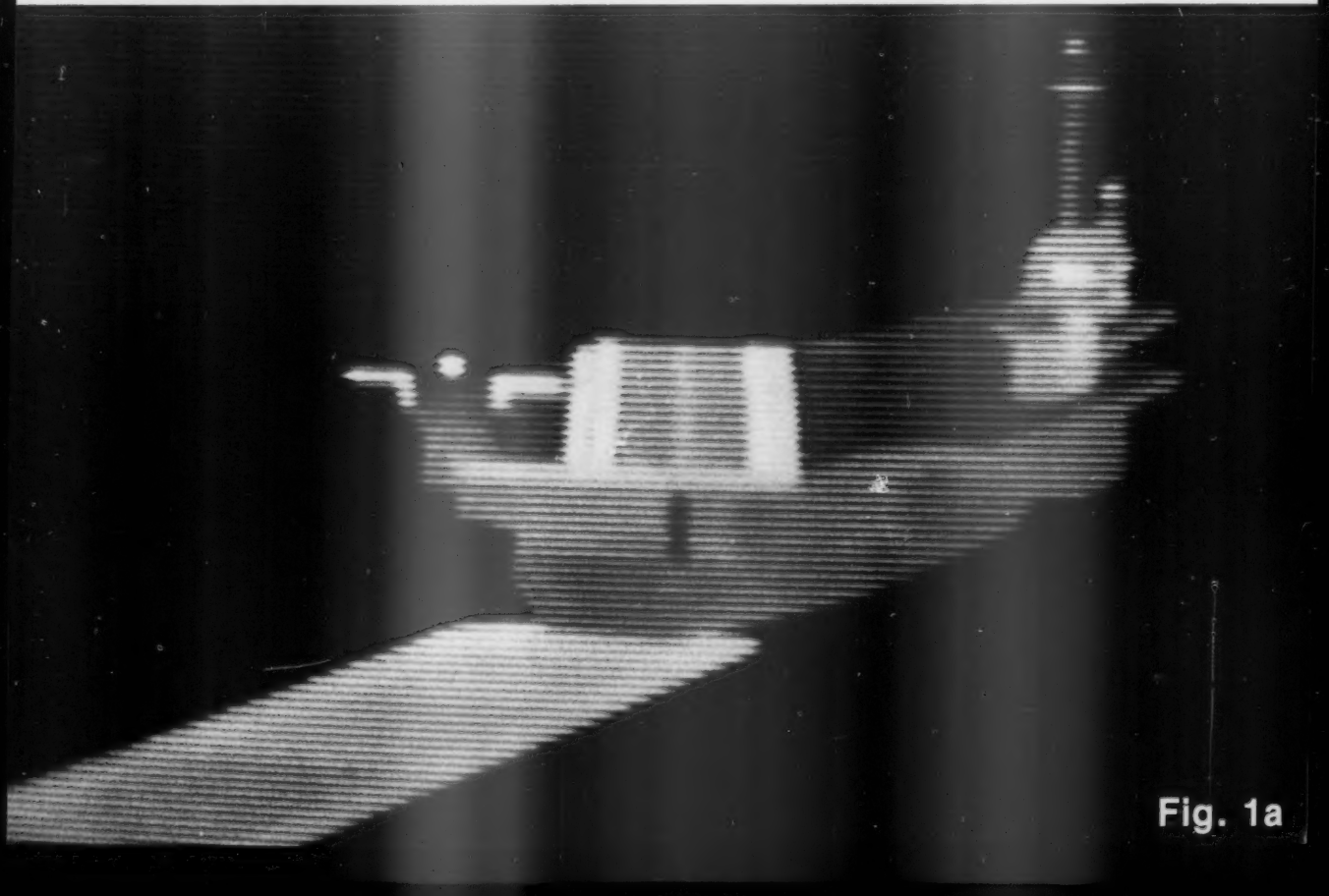
# Meatball, Lineup, Angle-of-Attack, and...Arrow

By LT C. E. Kaul
Naval Air Engineering Center

IN a recent lecture on night vision, an aviation physiologist was discussing night carrier landings, explaining that "... the severe reduction in natural visual cues at night – expansion pattern relationships, surface texture gradients, peripheral streaming, and horizontal field of view discrimination – affects an austere perceptual domain, rendering accurate control of azimuth and elevation somewhat more difficult than during daylight ..." while the CAG LSO quipped from the back of the room, "Yeah, at night it's dark. You can't see." Both comments, although stated quite differently, reflect a basic understanding of the problem encountered by naval aviators on a black, moonless night. It's not so much that you can't see where you are, it's that you can't tell where you are *going*. This dilemma is confronted during night formation and inflight refueling evolutions and is often painfully evident "on the ball."

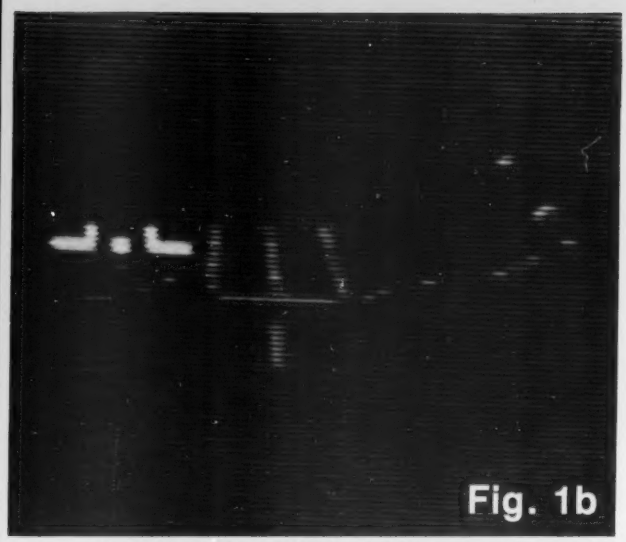
Carrier pilots have adapted to this, with varying degrees of success, by developing rigid scan discipline, greater reliance on the seat-of-the-pants and the VSI, and simple hard work. Every member of the fraternity, however, admits to *those nights* when he would rather have been occupied elsewhere. The statistics unfortunately reflect this in reduced boarding rates and increased accident frequency at night.

Numerous long-term studies have investigated this problem extensively, yet the basic technology in visual landing aids for fixed-wing carrier operations has not changed significantly in 25 years. The Mirror and Fresnel Lens Optical Landing Systems (MOLS/FLOLS) provide satisfactory feedback of relative



Excessive sink rate warning is indicated by lower *arrows*.

Fig. 1a




Upper *arrows* indicate insufficient sink rate on approach.

aircraft position on the glide slope, yet, by inherent design, have a limited capability of indicating magnitude and direction of movement, i.e., where the aircraft is *going*.

Since the initial fleet introduction of the A-7E Heads-Up Display (HUD) avionics package, the advantages gained from using the HUD as a predictor of meatball movement have been conclusively demonstrated. Retrofitting and maintaining HUD units on all fleet aircraft, however, would be impractical. Consequently, a fundamental modification to the FLOLS itself, aimed at improving its operating characteristics, has been developed by the Human Factors Laboratory at the Naval Training Equipment Center (NTEC) in Orlando, Florida.

The proposed system provides angle-rate feedback (similar to the HUD) directly on the FLOLS display, eliminating the requirement for additional aircraft/cockpit equipment. Continuously-tracked aircraft position and velocity data are used to compute a commanded optimal trajectory from which approach path error signals are derived and projected from the FLOLS. The error indicators, or *arrows*, are vertically displaced, thermometer-type lights which extend below the datum lights to show excessive sink rate, while illuminating above the datum lights to indicate insufficient sink rate. (See Figs. 1a and 1b.)

The display response to various conditions is depicted in the accompanying series of photographs (Figs. 2a, 2b, 2c, and 2d). The absence of any displayed error signal would indicate that the aircraft is flying the desired approach path.

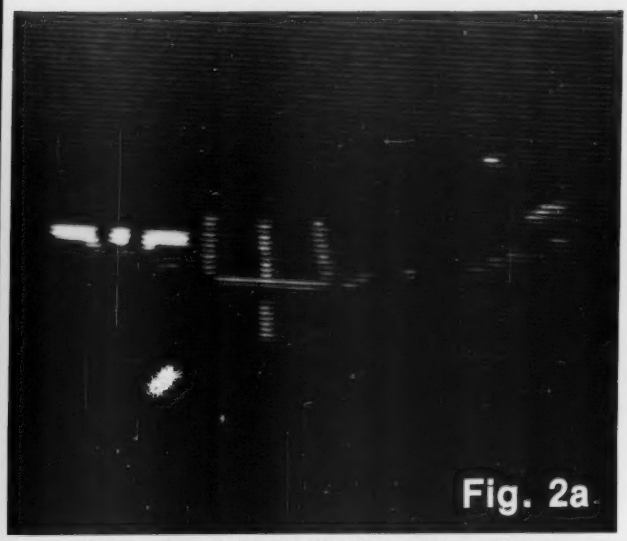
The early trend detection capability provided by this display enables corrections to be made prior to the onset of significant meatball movement. Glide slope errors are more easily controlled by using the *arrows* to determine the amount of initial correction required and the timing of subsequent readjustments.

The angle-rate system was recently evaluated by fleet pilots and LSOs against the conventional FLOLS in the Visual Technology Research Simulator (VTRS) at NTEC. Nighttime, Case III recovery conditions were simulated. Reductions in average glide slope error of 50 percent *in the middle* and nearly 40 percent *at the ramp* were demonstrated with the system when compared to the basic FLOLS. A slight improvement in azimuth control was also measured. This suggests that incorporation of the angle-rate system would reduce workload by shortening the phase lag associated with each glide slope scan interval, allowing added emphasis on lineup.

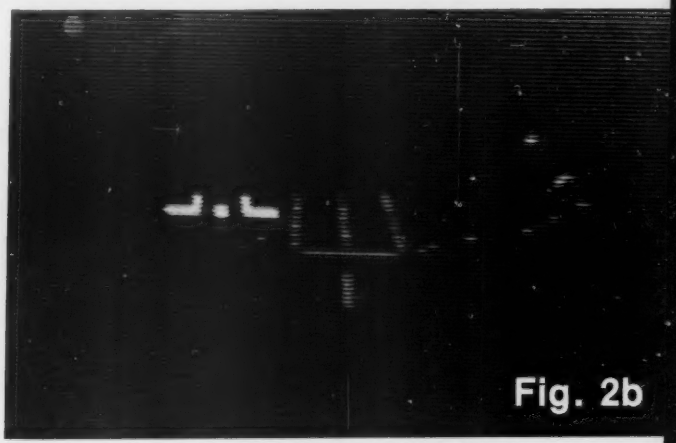


The highly favorable pilot response to the system is indicated by the following excerpts taken from postevaluation interviews:

"The displays are a quantum improvement over previous systems and would greatly enhance carrier performance. For

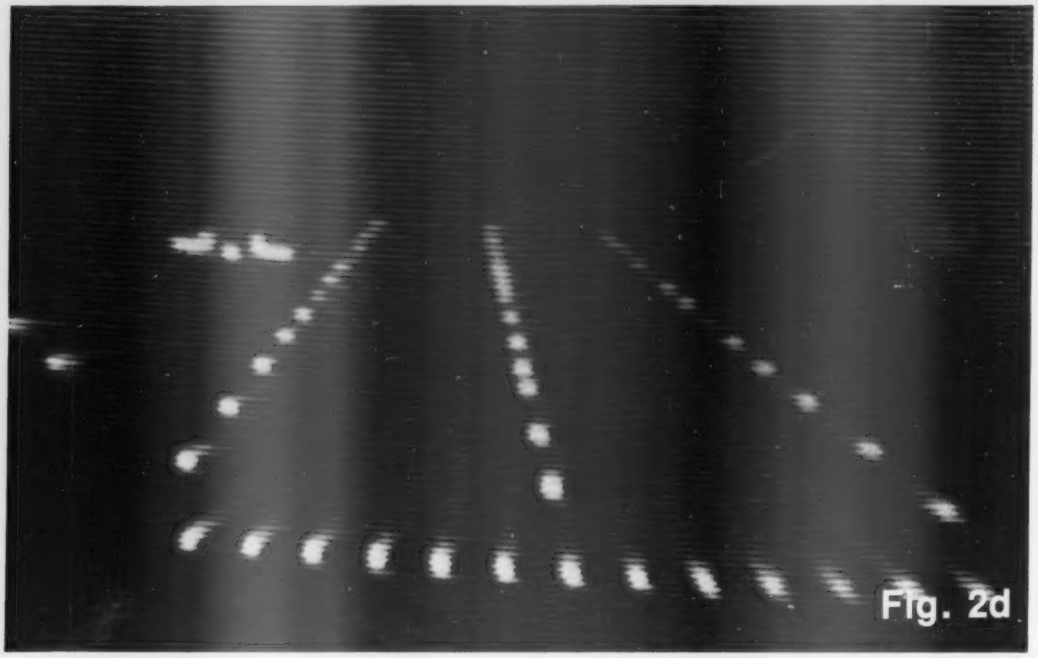



Lower *arrows* of short length indicate a slight settle on the start of approach.




A "climb in the middle" warning is indicated here.


A slight settle at the ramp is indicated here.




After correcting for a "slight low *in-close*," the upper *arrows* indicate the aircraft is getting slightly high.



non-HUD aircraft, this system would greatly reduce pilot workload."

"There is no doubt whatsoever that this system would produce safer passes at the boat, especially at night. The greatest impact would probably be noticed in excellent starts until *in-close*."

"This concept is outstanding and a long time coming . . . . It greatly reduced the workload of the approach from the start to *in the middle* and helped smoothly transition to the tighter control required from *in the middle* to *in-close* . . . A night landing would be more enjoyable if I had this system to look at."

"The fleet cannot afford . . . to not get this system on their carriers. I would predict that carrier landing accidents would be drastically reduced if this system were in use."

These results from the initial evaluation of the angle-rate, optical landing system could have significant implications for fleet-wide boarding and accident rates. One senior staff LSO, after having flown the system and observing the evaluation, remarked, "We need this mod, and we need it **now**. If we want to reduce pilot/LSO-caused landing accidents immediately, put this on all carriers!" ◄

*This system would be of greatest value for night, Case III recoveries, but would be of great benefit in day, Case I and II recoveries as well. (Photos taken in Visual Technology Research Simulator at NTEC.) –Ed.*

# You should have seen the one that got away!

By LCDR Phillip K. Allen
VAQ-133

"YOU should have seen the one that got away!" – the renowned cry of the frustrated fisherman, or the embarrassed mumbling of flight deck personnel and aircrew? Probably the former, but unfortunately it also seems to apply to the latter more often than we would like to admit.

As intrepid naval aviators and safety-conscious flight deck personnel, you no doubt devote a great deal of time and effort combating the small, overlooked checklist item or the hidden, miniscule mechanical problem that might cause you unwanted discomfort in the immediate future. However, several incidents of late would indicate that, given the potential confusion during a CV launch evolution, the probability of detecting an aircraft problem ends up being inversely proportional to the size and obviousness of the problem (i.e., it's the big ones that get away)!

Examples of this problem are all the documented cases of aircraft taking off with the wings folded or in some other incorrect configuration. A recent example was the A-3 which, after some confusion approaching the catapult, managed to take a cat shot with the flaps up. How could no one have noticed it prior to launch? Fortunately, the Boss did afterwards, and a last-minute call to the settling aircraft saved the day. Another example was my own recent launch in an EA-6B with the ram air turbine extended. In broad daylight, how could it have escaped everyone's attention, looming up there on the wing in plain sight of hundreds of people? As we all know, if it can go wrong, it will. But you'd think that these obvious errors would be spotted 100 percent of the time.

How can so many qualified personnel, literally swarming all over the *go* aircraft on a CV launch, overlook such obvious things? It is difficult to understand, but is in fact a phenomenon that must be reckoned with.

Often, aircrew and flight deck personnel are keyed for detecting the small things, and over long periods at sea, seem to develop tunnel vision or slowly lose their sensitivity in areas which are *always* correct, such as flap extension. The pressure of rushed and repetitive operations probably adds to this problem; the most common recurring gripes are the ones that are concentrated on in the time allowed. Finally, the common factor in many of the situations where the *big one* got away is broken habit patterns or procedures. This occurs so often during CV evolutions that it doesn't key the red flashing **beware** in everyone's mind that it should.

The solution to these embarrassing and sometimes tragic situations must be a renewed awareness and sensitivity to every aspect of the CV launch evolution by all concerned. That way, the *big one* won't get away. ◄

# WHAT TO DO ABOUT

## Located somewhere on the path between "SAFETY FIRST" and "HERE'S WHAT HAPPENED"



By CDR D. S. Woodford
Commanding Officer, VP-48


**The Problem.** From the infancy of naval aviation through today, commanding officers have been beset with nagging doubts as to whether or not "all possible" was being done in the area of aircraft accident prevention. A major difficulty has been, and remains, the lack of clearly identified Measures of Effectiveness (MOEs) in safety programs. This fact is driven home by noting the abundance of guidance (instructions and otherwise) in *aircraft mishap reporting* and *aircraft accident investigation* when compared with the lack of guidance regarding *aircraft mishap prevention.*

The title to this article was born when the following bit of wisdom, scrawled on a work center door, was noted:

The Commanding Officer tells it like he wants it.
The Maintenance Officer tells it like it's gonna be.
The Maintenance Chief tells it like it used to be.
The Work Center Supervisor tells it like it oughta be.
The Worker tells it like he wishes it were.
And Quality Assurance just tells it like it is . . .

This plagiarized wit gets a chuckle out of us by comparing – *wants it, it's gonna be, it used to be, it oughta be, he wishes it were,* and *like it is,* because every outfit has all the players and we all can see our players doing what is so succinctly described. However, a second look should key you to the fact that your outfit really does work this way at least half the time, because this bit of prose also describes, in every line, half of what any self-respecting outfit does – that is, of course – communicate. Each line has a "tell" in it. The half missing is the "doing" end of things, and that's what this article is going to look into.

**The Beginning.** "Safety First, Safety First, and Safety First" was the new CO's message passed at every opportunity. At quarters, at AOMs, at Department Head meetings, at Captain's Call, and every morning mumbling in the mirror brushing teeth, quoth the skipper, "Safety First." So much for "The CO tells it like he wants it."

We all know there are many, many steps between this first one and the supersafe goal of "to never have to hear" the accident investigator or QA "just tell it like it is." While objective MOEs in safety programs are lacking, the business of aircraft accident prevention exists in at least two arenas: first . . . in airborne aircraft; secondly . . . in aircraft on the ground. Much guidance exists in the area of how to fly an aircraft properly; in the U.S. Navy, NATOPS is a pretty good reference. However, since most of the time aircraft sit on the ground being fixed between flights, an examination of the ground phase will be addressed with the idea of *accident prevention.*

**The Middle.** "Hey, Skipper . . . why did you decide to stop flying the entire squadron for those 4 days on our last WESTPAC deployment?" The Aviation Safety School located at the Naval Postgraduate School in Monterey, California,

# IT

recognizes the difficulty in identifying objective safety MOEs and has instead, over the years, identified 9 subjective areas they call *Flags* that *can* give you a leg up on the safety forecasting business. For a quick recap, they are listed below:

| Squadron "Disease" | Safety Flag |
|---|---|
| • Apathy and Fatigue | Cleanliness of spaces |
| • Reflex Management | Does the flight schedule really schedule what flies? |
| • If it feels OK, do it! | How are your Standard Operating Procedures? |
| • Catch-up ball | How well does your outfit plan training? |
| • Broken feedback loop | Are QA audits and monitoring programs used? |
| • Grampaw Pettibone Mat'l | Does a NATOPS program exist? |
| • Circular file-itus | Is your AZ a real data analyst? |
| • It'll never happen! | How current is your fire bill? |
| • Unsked airframe mod (big dent) | Adequate GSE training and licensing? |

Most of these *Safety Flags* lend themselves to a big one-time correction (boot), with periodic interest as new members rotate into the different areas of responsibility. However, three of these *Flags* are worthy of a daily eyeball check by all concerned (skippers, especially). We quit flying for 4 days because these three *Flags* were up, and to ignore them most probably would have been a serious mistake.

Here's what happened: After a particularly successful month of high tempo operations, things were looking good all the way around. Squadron routine sounded like the purr of a well-oiled sewing machine in the hands of a professional. However, a slow buildup of problems with some serious consequences were hiding just below the surface. The first glimmer of the tidal wave showed up on the charts of two maintenance programs. One chart tracked the cumulative number of "awaiting maintenance gripes" and the second chart showed "maintenance man-hours per work center." The awaiting maintenance gripes were mostly *up* gripes. (Simply put, *up* gripes allow a plane to fly and *down* gripes mean the plane cannot fly.)

In a relatively short period, the number of *awaiting maintenance up* gripes showed an alarming increase. Similarly, the *maintenance man-hours* in Work Center 110 took a wild upswing that ultimately reflected a 75 percent increase! At the same time, daily tours through all the maintenance work centers showed maintenance personnel with increasing signs of fatigue. Tempers were short, and clutter (parts, rags, unemptied trash, etc.) was building up. On the operational end, aircrews were aborting missions at a rate far above any previous high. The flight schedule began to have "CANX" and "TBA" as a regular feature. A look at the reasons for the aborts suddenly put the picture into sharp focus.

A vicious circle had developed. Mechanics were spending all their time trying to fix *down* gripes, and the number of *up* gripes was steadily increasing, with an awesome psychological impact. The aircrews were taking the planes out and then aborting time and again for the same things. Back into the shop came the high priority *down* gripes that the mechs had already tried to solve. They *had* to be fixed, and the backlog of *awaiting maintenance up* gripes went still higher until it began to intimidate even the old hands. Since the maintenance department had already shifted into *high gear*, with 7-days-a-week operations and 12-on-and-12-off shifts, longer working hours would not have solved the problem. Add to this flail the requirement to host (i.e., fix) other squadron aircraft (augments), and the shops' jobs seemed insurmountable. Shortcuts started to occur. The number of aircraft incidents rose. Aircrews were disgusted at the failure of so many missions and frustrated at the many man-hours wasted in preflight preparations. On and on, round and round, the graphs kept climbing. It had to stop!



It did! The facts were explained to the *boss* and the skipper requested and received permission to ground the squadron in order to reverse the trend. The flightcrews caught up on their ground jobs. The maintenance team worked off the backlog. The spaces were cleaned up. Slowly, the maintenance department began to purr again. Some of those good indications began to reappear. Refreshed, the outfit hit the road and had sustained operational success the rest of the deployment.

**The End.** This is almost what happens to COs of aviation commands who go to the *big boss in the sky* and say "We can't fly." (One of the few times the skipper ever tries to say "we.") Of course, the *boss* has been there before and probably understands better than you the points you're going to make. However, he also knows all the reasons why he never had to do it. It is possible and at times *necessary* to come to "all stop" in a heavy operational environment. Knowing when to do so is the key. For one squadron CO, the keys were available:

- Cleanliness of spaces.
- Does the flight schedule really schedule what flies?
- Are QA audits and monitoring programs held?

How does your outfit use *Safety Flags?* ◄

# INFLIGHT ENGAGEMENT

TWO pilots manned an S-3 for a training/familiarization flight. The flight was the third of a series for a new pilot. He and his instructor thoroughly briefed the flight and conducted a good preflight. After the prestart checklists were completed, the engines were started. The trainee, in the left seat, lowered the hook when signaled by the plane captain. Later, neither pilot could remember a light in the hook handle. The hook was raised, and the plane captain confirmed that it was up and locked.



All checklists were completed and the pilots were cleared to taxi. They taxied to the duty runway and executed an instrument departure. The pilots climbed to altitude and performed various confidence maneuvers, approaches to stalls, and engine shutdowns.

The instructor then called the tower and requested a practice EFCS (Emergency Flight Control System) low approach to the duty runway. The instructor configured the aircraft for EFCS by turning off various switches and systems. The trainee headed for the field and lined up with the duty runway. He asked the instructor to select the emergency position on the emergency flap normal/emergency switch and to place the trailing edge flaps at 72 percent. The trainee then placed the wing flap lever in the takeoff position and leading edge flaps in the down position.

The trainee extended the gear and the arresting hook. The instructor saw the transit light in the arresting hook handle and then saw the lights go out upon completion of the hook extension. After this, the checklist was completed and the trainee completed a good low approach. Power was added and a waveoff was begun. During climb, the instructor reconfigured the aircraft for normal flight control systems.

The instructor asked for a right turn out to reenter the break and was cleared for this by the tower. The trainee began a hard turn and retracted the gear emergency extension handle, doublechecked the gear handle down, depressed the emergency gear reset switch (to return the gear to the normal system), and retracted the landing gear. The instructor asked the trainee to raise the flap control lever to the up position. This was done to demonstrate that the leading edge flaps would not retract with the emergency flap switch in the emergency position and the trailing edge flaps extended beyond 20 percent.

After the demonstration, the instructor moved the trailing edge flaps up to 10 percent and left the emergency flap switch in the emergency position. (The trainee had not requested the instructor to return the switch to normal. However, the instructor had stressed this during the brief.) Additionally, the trainee did not realize that the arresting hook handle was down, which the instructor had also emphasized during the brief. The instructor was well aware of the aircraft's configuration, but didn't feel he was allowing the trainee to get into a situation that he couldn't handle.

Meanwhile, they were in the pattern and in a normal configuration, with the exception of the hook down, trailing edge flaps at 10 percent, and the emergency flap switch in emergency. The trainee climbed to 1500 feet, accelerated to 250 knots, and continued toward the duty runway. Upon reaching the break, they were cleared No. 2 behind a T-28. They took interval on the T-28 on downwind. While dirtying up and decelerating, the trainee put the gear handle down, pulled in the speedbrakes, and put the flap lever in the landing position. He was not aware that the flaps didn't extend because the flap switch was still in the emergency position.

The trainee continued downwind and descended to 1000 feet. The landing checklist was completed by the challenge-and-reply method. When the instructor called for the hook, the trainee saw the hook handle was down and raised it. The trainee checked the hook handle up and the light out. The trainee then was free to concentrate on flying the aircraft. However, he was having a bad time trying to slow down, and the instructor was watching him carefully. When flaps were called for, the trainee checked the flap handle in the land

As can be seen here, an inflight engagement can ruin your day (and your aircraft). Don't let complacency hook you and your aircraft.

position, didn't cross-check against the trailing edge flap indicator, and reported that flaps were in the landing position. The instructor knew full well that the flaps were up and the switch was in the emergency position.

The trainee thought the checklist was complete. However, he knew there was a discrepancy between the angle-of-attack and the airspeed. At the 180, he was cleared for a touch-and-go, and he saw 17 units AOA. The instructor started pinging on him for power, airspeed, and AOA. At the 90, the trainee concluded he was deep and low. The instructor checked the hook handle up and light out, wheels down, brake pressure up, and DLC (Direct Lift Control) engaged. The trainee checked the flap indicator, then the emergency flap switch, and realized the flaps were up. The instructor knew the trainee had made the discovery and directed him to continue and shoot a no-flap approach.

The trainee rechecked everything, and the instructor checked hook, gear, and flaps and said, "Nice approach." The lens was not on, and the trainee aimed for the runway area to the right of the lens (1300 feet past the approach end).

The tower controller and supervisor saw the hook down and the controller issued a waveoff. The trainee added full power and rotated, but the aircraft continued to descend to touchdown and then became airborne immediately. However, the hook engaged the crossdeck pendant of the arresting gear. The instructor recognized an inflight engagement and kept full power on the aircraft to minimize the severity of the impact.

The S-3 pitched up, to an altitude of about 10 feet, and remained airborne for 368 feet. It then impacted the runway nose gear first, almost on centerline, then hit on both main-mounts. The starboard tire blew, followed by the failure of the wheel assembly. The aircraft continued for another 143 feet down the runway before the starboard gear collapsed. Then it slowly began a right skid and stopped another 464 feet down the runway. The cable was still engaged and the total distance traveled was 975 feet. The pilots secured the engines, safed their seats, and departed the aircraft just as the crash crew arrived.



Several interesting factors contributed to the accident:

- The instructor ignored a directive to *simulate* dropping the hook during EFCS landing approaches. He said he thought the standardization note had outlived its usefulness.
- Neither pilot could recall a hook transit light, or the thump of the hook locking in place. Both did recall the hook handle up and the light out.
- The instructor disregarded published procedures in that he introduced the EFCS on the third vice the fifth flight.
- The instructor could not recall the ground hook test, and the trainee was unfamiliar with the proper ground hook lighting sequence.
- The instructor was deficient in his supervision of the flight.
- The tower controllers were lax in not using binoculars as the aircraft approached the field, especially after the crash crew had alerted them on the previous approach.
- The fresnel lens had not been turned on with the S-3 in the pattern, contrary to SOP.
- A single proximity switch failure occurred and prevented the tailhook from retracting when the handle was raised. ◄

# SURVIVAL/BAILOUT PROCEDURES

## Integrated Torso Harness with Standard Soft Pack – LPA Inflation and Liferaft Deployment Sequence

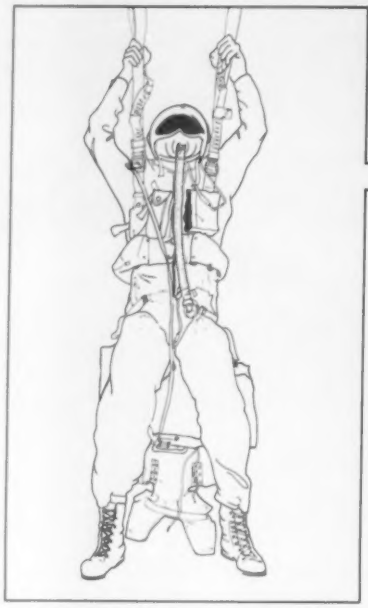
## E-2 Configuration with Bailout Bottle

By CDR Jack Greear, MSC
Aviation Physiology Training Unit
NAS Norfolk, VA

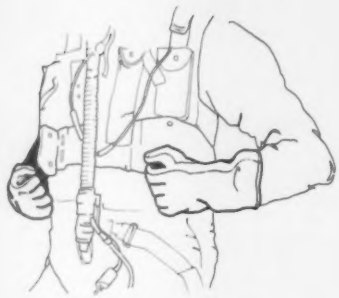
(E-2 LSE – LT C. Anderson)

DURING the next several months, APPROACH will be publishing survival/egress procedures for all authorized combinations of escape and survival gear. These step-by-step diagrams and procedures will eventually become an integral part of the NAVAIR-00-80T-101 Survival NATOPS Manual recently ordered by CNO. NAVAIR-00-80T-101 will be a composite of all the best data and procedures on survival/egress techniques, and will, hopefully, eliminate the inconsistencies between aircraft NATOPS Flight Manuals on the proper use of survival equipment and prescribed egress techniques.

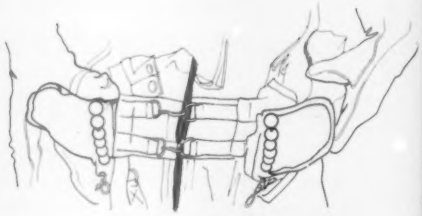
We will be publishing different equipment combinations each month, so be patient and your specific equipment and procedures will appear. These techniques are being published in advance of NAVAIR-00-80T-101 for two important reasons: first, so that they will get to the Fleet as soon as possible; and second, so that the project manager may receive any possible feedback on these procedures before NAVAIR-00-80T-101 is finally printed. Please forward any comments to: Commanding Officer, Naval Regional Medical Center (Code APTU-230), Portsmouth, VA 23708.



1. Immediately following opening shock of parachute, check the condition of the parachute canopy. If no malfunctions have occurred, proceed to next step.



2. Locate LPA Inflation Toggles, or



2A. Locate Beaded Handles.

3. Pull Inflation Toggles or Beaded Handles down and out to inflate LPA.

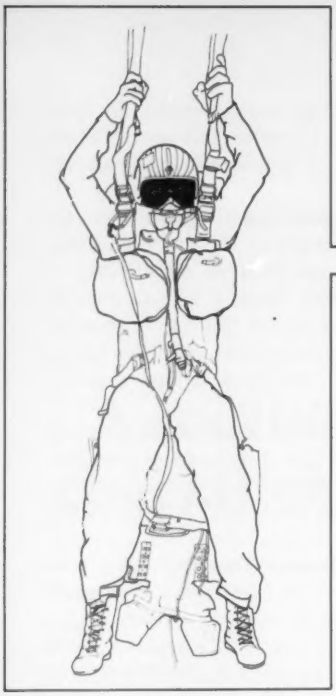
4. Allow a few seconds for full LPA inflation to occur.

5. Remove chafing material.

6. Snap LPA waist lobes together.

7. Squeeze LPA waist lobes together to help release Velcro on collar lobe, or

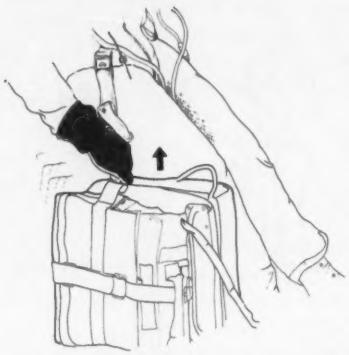
7A. Manually release Velcro on collar, if necessary, to achieve complete collar lobe inflation.



8. Crewman under canopy with LPA inflated preparing to deploy LR-1 liferaft. (If time permits, remove oxygen mask and raise visor at this point to make the following steps easier to accomplish. It is difficult to breathe with the bailout bottle. Consequently, its retention for use in underwater breathing is not recommended as it is in tactical jet aircraft.)

9. Release left mini-Koch fitting of standard Soft Pack.

10. Location of standard Soft Pack after release of left mini-Koch fitting.



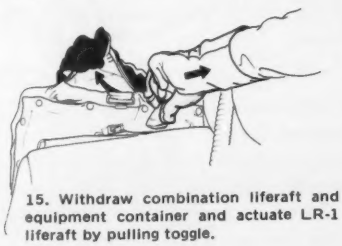
11. With your right hand, grasp the right side restraint strap (lapbelt) and lift soft pack assembly.

12. Place left hand under seat cushion of soft pack assembly for proper positioning.

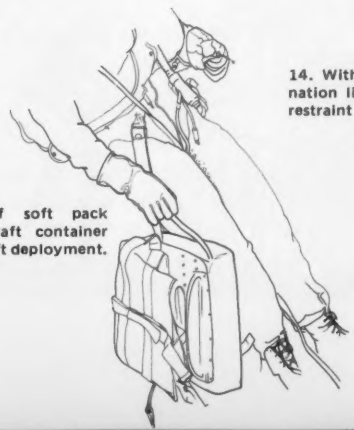


13. Grasp soft pack assembly by the handle with your right hand.

14. With your left hand, release combination liferaft and equipment container restraint fitting.



15. Withdraw combination liferaft and equipment container and actuate LR-1 liferaft by pulling toggle.



16. Position of soft pack assembly and raft container after LR-1 liferaft deployment.

17. Location of LR-1 liferaft and equipment container prior to water entry.

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# How does your safety show?

By LCDR Ric French
Multi-Image Education Specialist
Naval Safety Center

IT'S your time in the barrel. Everyone will be watching and all attention is on you, the safety officer – the expert who knows all there is to know. The pressure is on. So you run all over the centrex, getting things wired down so you can address everyone from airman to CO. You can either snow 'em or baffle 'em, depending on your resources.

So how can you put on a super yet simply constructed presentation? Speaking from experience, the single-tray slide projector show is simple, easy to handle, and has the potential for impressing the socks off those hard-of-hearing, high-risk, thousand-hour lieutenants.

And where do you get such a *dog and pony show?* Well, they are called Hazard Awareness Kits (HAWKits), and at present, there are eight of general interest to aviators:

**HAWKit 12 – Ground Support Equipment** – Gives the basics on licenses, hand signals, vehicles, and general operating procedures. Geared to the E-3 through E-6 who has an occasion to operate GSE, or the bold JG who commandeers GSE for his shuttle from the hangar to the bird. (N63393-79-0002 s/s)

**HAWKit 14 – Seatbelts** – Good, gentle reminder for those who can't seem to remember to restrain themselves. Centers around a discussion between a believer and a nonbeliever. (N63393-79-0002A s/s)

**HAWKit 15 – NATOPS Introduction** – Shows how the NATOPS Manual is developed and how changes are submitted. Geared to all neophyte flightcrews. (N63393-79-0003 s/s)

**HAWKit 16 – Aircraft Handling Ashore** – Indoctrination of a new man on the line to the correct method of moving an aircraft into the hangar. Also covers hand signals for moving an aircraft ashore. Designed to stem the tidal wave of ground crunches. (N63393-79-0004 s/s)

**HAWKit 18 – Flight Deck Safety** – Based on the concept that everything on the flight deck is trying to get you. Built for the full range of people who come in contact with the flight deck, from the *buzzards* in Vulture's Row to the first cruise types. (N63393-80-0001A s/s)

**HAWKit 19 – Submarine-Helicopter Transfer** – After years of fakin' it, the submariners and helo drivers have agreed upon a doctrine for making a pickup from a submarine. It's written from the sub's point of view, but it should be part of any angel or SAR unit's training schedule. (N63393-80-0002 s/s)

**HAWKit 20 – Driver Improvement** – The officially sanctioned and tested AAA Course, containing eight modules. On ship, one module a night could easily slip in front of the evening movie, or precede an AOM. It is also a good presentation just before Christmas, or any major driving holiday. (N63393-80-0004 s/s)

**HAWKit 21 – Hangar Deck Safety** – Covers a safe aircraft movement to and from the hangar bay by V-3 personnel. Built for the entire division, squadron plane captains, and brake riders. (Available in July 1980.)

These HAWKits are available to you now and are easy to show. Just about any slide projector and any cassette tape player are all you need. The shows range in length from 7 to 17 minutes. You can either check 'em out (for a month), or buy 'em (for $25 each) from the folks below:

Commanding Officer
Naval Education and Training Support Center, Pacific
(Code N-5)
San Diego, CA 92132

Commanding Officer
Naval Education and Training Support Center, Atlantic
(Code N-5)
Bldg. W-313
Naval Station
Norfolk, Virginia 23511

One idea to pass on from "them that knows" – if you want to buy the kit and modify it with your own personalized slides, you can pack a bit more punch into the show. For any questions, or any suggestions for future HAWKits, call LCDR Ric French, Naval Safety Center, Autovon 690-4005/3960.

# A routine checkflight!

By LCDR C. R. Carroll
HSL-36

IT'S just another **routine** functional checkflight. You and your men have been working late every evening and through most of the weekend trying to get your aircraft ready for deployment. That No. 2 engine has been a constant source of trouble, requiring one thing after another. You're hoping today everything will work right so you can breathe a little easier and enjoy these last couple of days at home. After reviewing the book, you get your final QA brief and head out to the aircraft. It's a nice sunny afternoon, with just a little nip in the air.

Upon completing the preflight, you signal for a power unit and commence strapping in. Once through the prestart checklist, you glance to see that the fire guard is in place and go through a normal start sequence on No. 1. As you get ready to start No. 2, you notice your mech standing by to conduct the poststart leak check as briefed. As you go *around the horn* during lightoff, you see the director giving you the standard **figure eight** signal indicating a fire. Immediately, you initiate emergency engine fire and shutdown procedures. Once the cockpit procedures are complete, you notice the fire guard pointing a fire applicator at a large fireball which appears to be reaching all the way from the tailpipe down to the ground. Only something is definitely wrong – nothing seems to be coming out of the fire bottle.

With advanced stages of panic rapidly setting in, your mind appears to be racing – trying to sort everything out. Just as you begin to think to yourself, "This is going to be one of those days," as that last and bewildered feeling of futility sets in, you notice a figure dashing up to assist the helpless fire guard. It's your mech, and he's removing his foul weather jacket and immediately uses it to beat out the flames.

Just another **routine** maintenance flight, right? Well, how about those **routine** emergency procedures? Next time you're breezing through that **routine** crew brief which you've done hundreds of times before, ask yourself, "What if it really happens to me?"

# Jogging for fun and profit

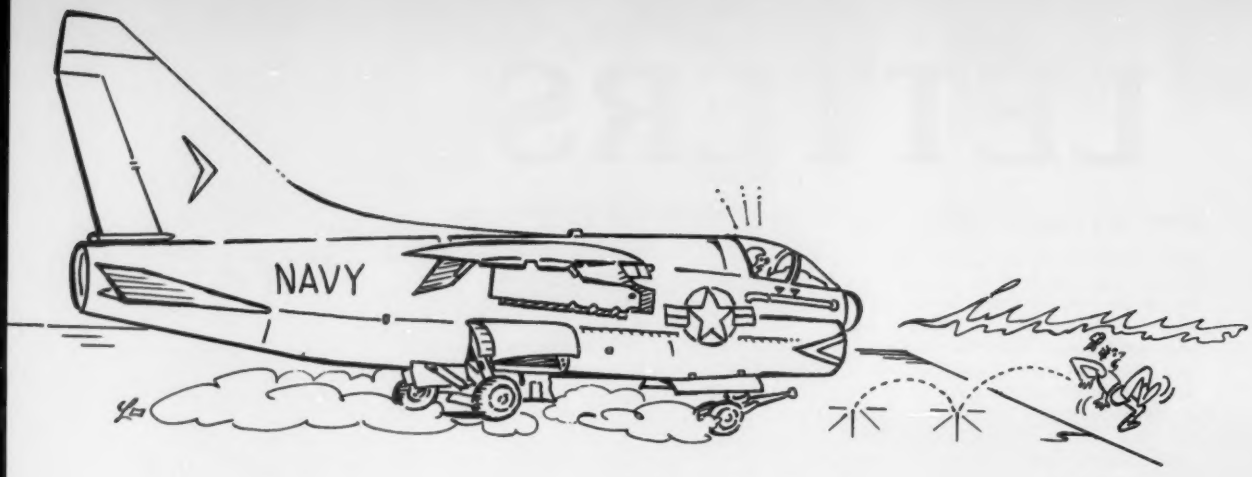
By LT Jim Engler
VA-52

JOGGING has received a healthy share of attention lately, and when the fad goes away, there will still be a lot of dedicated flight deck runners left on our carriers. A large percentage of these joggers are concerned flight crewmembers who must stay healthy and in tip-top condition in order to maximize their performance while flying.

What happens to a type A personality (most of us in the flying business) when he comes in contact with the flight deck environment? Let's look inside the mind of a typical aviation-type, LT Joe G. Jogger, as he goes through mental gymnastics to successfully complete his daily run. LT Jogger lurks in the catwalk, forward of the angle deck, impatiently waiting for the last fixed-wing aircraft to land on the 1430 recovery so he can rush up to the flight deck. He would like to be the first on the roof so he can show off his new quadruple-knit running shorts. He never considers staying out of the catwalk, below decks, in case a piece of debris or an aircraft crash and its flying metal comes tearing through the catwalk. This jogger *knows* that it is too unlikely a possibility. In fact, he figures if he hears a crash, he'll race below before anything enters the catwalk. After all, Joe remembers vividly the race he ran yesterday against a huffer (aviators all love competition). Although the huffer ultimately won, LT Jogger is sure he would have won if he hadn't slipped. No, he wasn't hurt. His lightning-fast reflexes saved him, as they usually do.

After a good loosening and stretching of his muscles to protect against any strains or tightness, he starts his digital alarm/chronometer/stop watch and sets off for several rewarding laps. A thorough preflight of the flight deck (by looking around) has shown Joe that there are several areas to be carefully avoided. He singles out the slippery catapult tracks, he astutely notices that the painted surfaces of the deck are more slippery than the unpainted surfaces, and realizes that every tiedown chain is a potential trip-me-up. Before Joe can even clear the forward end of the angle deck, he has to hop over a tow bar between an A-6 and a tow tractor. "Why do they have to respot all these aircraft during *jogging quarters?*" Joe asks himself. After all, it's hard enough to run up here on the flight deck without having to dodge all these moving aircraft.

Joe works on his breathing rate to ease his tension, and as he nears the aft end of the ship, our typical flying jogger, or jogging flyer, has managed to maintain forward motion while inserting his foam earplugs to protect against the piercing whine of a jet engine during a maintenance turn. Surely one of the maintenance guys will notice that FOD on the deck that Joe sees as he passes by. (He can't stop now – he just got started.) He negotiates the turn on the aft end of the ship with only a slight loss of speed due to his angle-of-bank and heads upwind towards the bow. Joe smoothly strides over the No. 1




and No. 2 arresting wires and leaps high into the air to clear the No. 3 wire. He has found that when a tractor pulls a fully fueled aircraft over an arresting wire, the wire will swing anywhere from 6-28 inches, so Joe's 30-inch leap clears the moving No. 3 wire with inches to spare. Why go around when you can jump like a deer?

The E-2 *Hawkeye,* which landed right before the helo, still has one engine turning, so Joe Jogger quickly computes his safe escape distance and passes a comfortable 10 feet from the propeller, well clear of his estimated danger area. LT Jogger nears the end of today's run, accelerating to an imaginary finish line, perspiring and breathing deeply, but feeling great, knowing his efforts have strengthened his heart and leg muscles. Being constantly safety conscious, our jogger leaves the flight deck as soon as he hears the air boss announce that crews are manning for the next event. He stands in the catwalk for a few more minutes getting some sun – after all, no one can see him down in the walk.

He carefully negotiates the steps from the catwalk to the 03 level and thinks to himself as he leaves, "I just don't understand why everyone doesn't get up here and run. I feel so much better when I do." Then he showers, dons a clean flight suit, rides the escalator down to the ship's store, gets a candy bar and a diet soda, and heads to the readyroom for his next brief.

As you can easily see, this is fiction. None of us professional joggers would ever be guilty of such a cavalier attitude, right?

With a lot of at-sea days yet to go, and a lot of getting in shape for that special lady, many of us will be up on the roof setting *jogging quarters.* A few sensible safety precautions will do much to get us back to the states in the best physical condition:

- Wear your best running shoes – "Pusan specials" are better than nothing, but not much. You've only got one set of feet – invest in some good running shoes.
- Take a set of earplugs with you. That way if an engine does start turning, the noise won't hurt your ears. (Don't even get close to a turning engine or prop. Avoid them like the plague.)
- Wait 'til the recovery is complete before going onto the flight deck, and when the air boss says "It's time for all unnecessary personnel, joggers, sunbathers, etc. to leave the flight deck" – DO IT! Leave at that time and do not delay. That way everyone is happy, and no one gets hurt.
- Don't imitate LT Jogger. He's the guy who takes too many chances. Remember, the flight deck is a terribly unforgiving place!



## A safety recommendation

By LT Bill Short
VP-4

AT the suggestion of our commanding officer, CDR Walter D. West III, we purchased heat/fireproof gloves (welder's gloves), Stock No. 8415-00-268-7859 ($6.68 per pair) for all our squadron aircraft.

In the event of an overheated/on-fire piece of electronic equipment, the inflight technician can remove the gloves from their storage locale near the sonobuoy storage area and save himself from possible arm or hand burns in handling the equipment.

We would like to offer this suggestion to the P-3 community, as well as any other aircraft communities in which it would be applicable.

# LETTERS

## Bomb Bay Luggage Racks

*NAF Detroit* – The top priority of every aviation community, be it VA, VF, VP, etc., should be safety. **Safety First** should be every squadron's motto. Recently, our wing came down on our commanding officer hard because his safety program was not up to their expectations. That is one of the jobs of a wing, to monitor their squadrons to see if they are maintaining sound safety procedures. Now comes the question, "Who inspects the inspectors?"

Every one of us at one time or another has done something unsafe, this author included. But for an air wing to condone or approve of an unsafe act is beyond comprehension. Yet it has happened and it is happening today. "No," you say. Well, read on!

Case in point. The P-3 NATOPS states: "Only the external and internal stores listed in Fig. 1-48 through 1-53 may be carried singly or in combination to the limits shown." Nowhere in NATOPS, or any other publication, does it authorize or even mention the use of bomb bay luggage racks in the P-3 aircraft. Yet almost every VP squadron has at one time or another used them.

How can a squadron violate NATOPS and get away with it? "Because it's common practice," "Everyone does it," "It's been done for years," "It doesn't say we can't use them," are just some of the comments heard by this author. You would expect such a gross violation of NATOPS to be discovered by wing inspectors on visits. Yet, the wing this author is a member of has issued an instruction authorizing the use and listing the procedures for installation of bomb bay luggage racks.

The contents of this instruction say, in part, "A review of possible emergency situations revealed no case where the weight of a bomb bay rack and its contents would be of any significance to safety of flight. Additionally, there is no known data on the path a rack would take if jettison were attempted . . . Accordingly, enclosure (1) requires that safety pins remain installed at all times . . ." Not being a highly educated person (no college), I am not expected to know the effect of adding 1000 to 2000 pounds of nonjettisonable weight to the gross weight of an aircraft (forward of the CG) in a ditching situation. But in my unlearned opinion, this extra weight, if not slammed through the floor on initial impact, could increase the rate of sink of the aircraft, eliminating precious seconds for crew evacuation.

What can we do? The luggage rack is sometimes needed for deployment, cross-countries, etc. Solution: design a bomb bay luggage rack that can be jettisoned in an emergency, submit it for approval, add it to NATOPS with appropriate checklists in the loading manuals, but until that time – don't use it!

AO2 Brian M. Craig
VP-93

**• NAVAIRSYSCOM is currently studying the feasibility of developing a standardized bomb bay luggage rack for P-3 aircraft. At present, the use of these racks is not authorized, and anyone using them is in direct violation of NATOPS.**

## A Little Help From the Corps!

*Kaneohe Bay, HI* – In response to R. M. Stepteau's letter regarding the safety and improvement of operations aboard aircraft carriers (APR '80 APPROACH):

In my experience, rubber bands/rollers on belts to enhance the landing of aircraft upon aircraft carriers would be quite cost prohibitive. Besides, once these items were in the Navy supply system and given a federal stock number, they would fast become unavailable.

Can you imagine what would happen if the 16-foot-wide rubber band ever broke?! After extensive research, expending many man-hours, I have an idea which is quite simple and rather inexpensive. As the aircraft is landing, the ship is submerged. Upon the aircraft's arrival (say, at the bridge), the ship is quickly raised. The aircraft is then parked by the flight deck scuba men, who then make ready for the next aircraft recovery.

Again, extensive research into the ship's submerged time indicates that a depth of only 1 to 2 feet, for a maximum of 30 seconds, might be required per aircraft.

For my idea to improve the safety problem upon the aircraft carriers, I suspect a check in my behalf of $9.98 would be most appropriate.

GySgt F. R. Lombardi
MAG-24

**• How about an extended Indian Ocean cruise aboard a carrier, to conduct further research, instead of the check?**

**APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: APPROACH Editor, Naval Safety Center, NAS Norfolk, VA 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.**







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Drive carefully.
Some motorists are recalled
by their Maker.
Poster idea contributed by SSGT James C. Matthews, VMO-1, MAG-29.

Diagnosis:

# TARGET FIXATION

Prognosis:

# YOUR LAST GOOD HIT!

SEE DISORIENTATION ARTICLE ON PAGE 12.